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T. Y. W. N.
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): FORREST, et al.

Serial No.: 09/136,342

Filing Date: August 19, 1998

For: ORGANIC PHOTSENSITIVE
OPTOELECTRONIC
DEVICES WITH TRANSPARENT
ELECTRODES

Group Art Unit: 2875

Examiner:

RECEIVED
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GROUP 2100

Honorable Commissioner of Patents and Trademarks
Washington D.C. 20231

PETITION TO MAKE SPECIAL UNDER 37 C.F.R. §1.102

SIR:

Applicants hereby petition to have the above-identified patent application made special on the ground that the invention, as disclosed and claimed, materially contributes to the development of energy resources and the more efficient utilization and conservation of energy resources. See 37 C.F.R. §1.102(c) and M.P.E.P. §708.02, subsection VI. It is believed that no fees are due in connection with this Petition. If, however, such fees are required, the Commissioner is hereby authorized to charge Kenyon & Kenyon's Deposit Account No. 11-0600 for that purpose.

The technology of the present invention, known as "organic photosensitive optoelectronic device" or "OPOD" technology, makes use of organic materials that convert electromagnetic radiation into electricity. The organic materials are typically arranged as thin layers between electrodes. A voltage may be generated across the electrodes when the OPOD is irradiated, or in other applications the effective resistance across the electrodes may be reduced resulting in an increased current through the OPOD.

OPOD technology has application in photovoltaic energy generation devices, i.e., solar cells. OPODs according to the present invention have increased efficiency of

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energy generation due to the novel transparent electrode configurations and multilayer devices possible with the invention presently disclosed. The transparent top electrode configurations permit admission of light into an OPOD on the side opposite the substrate so that a variety of light weight, flexible substrate materials such as plastic may be used. This makes energy conserving solar cell technology available for a greater number of practical applications. The stacked multicell OPODs of the present invention permit optimization of the "fill factor" associated with such solar cell devices to provide optimum energy conversion efficiency coupled with selectable voltage and current levels. Additionally, the stacking capabilities of the present invention permit the optimization of the OPOD configuration for the anticipated radiation intensity, e.g., the brightness of the expected ambient light, thus producing increased energy conversion efficiency.

In addition, the OPODs of the present invention have application as energy efficient photodetectors, using reduced power for detection of electromagnetic radiation due to the novel transparent electrode and multicell configurations disclosed in the instant application. Such highly efficient photodetectors can be utilized in household and industrial applications such as security, monitoring and inspection equipment to reduce energy use in those applications.

It is respectfully submitted that all of the requirements of M.P.E.P. §708.02 VI have been satisfied. It is submitted that the OPODs of the present invention qualify under both categories (1) (development of energy resources), and (2) (more efficient utilization and conservation of energy resources) of M.P.E.P. §708.02 VI. Accordingly, it is respectfully requested that this Petition be granted and that an accelerated examination of the above-identified application be ordered.

Dated: 11/19/98

By: George O. Winborne
George O. Winborne
Reg. No. 43,277

KENYON & KENYON
One Broadway
New York, NY 10004
(212) 425-7200 (tel.)
(212) 425-5288 (fax)